

Supplementary information

Further insights into release mechanisms from nano-emulsions, assessed by a simple fluorescence-based method

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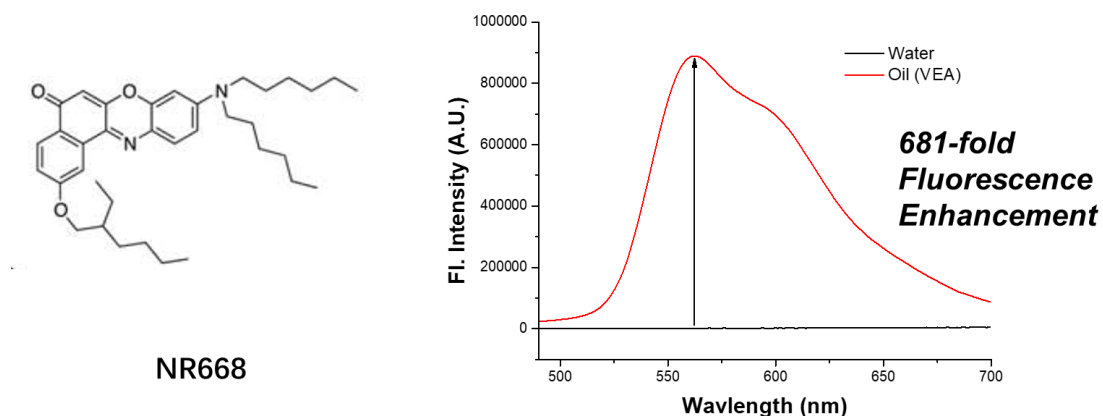
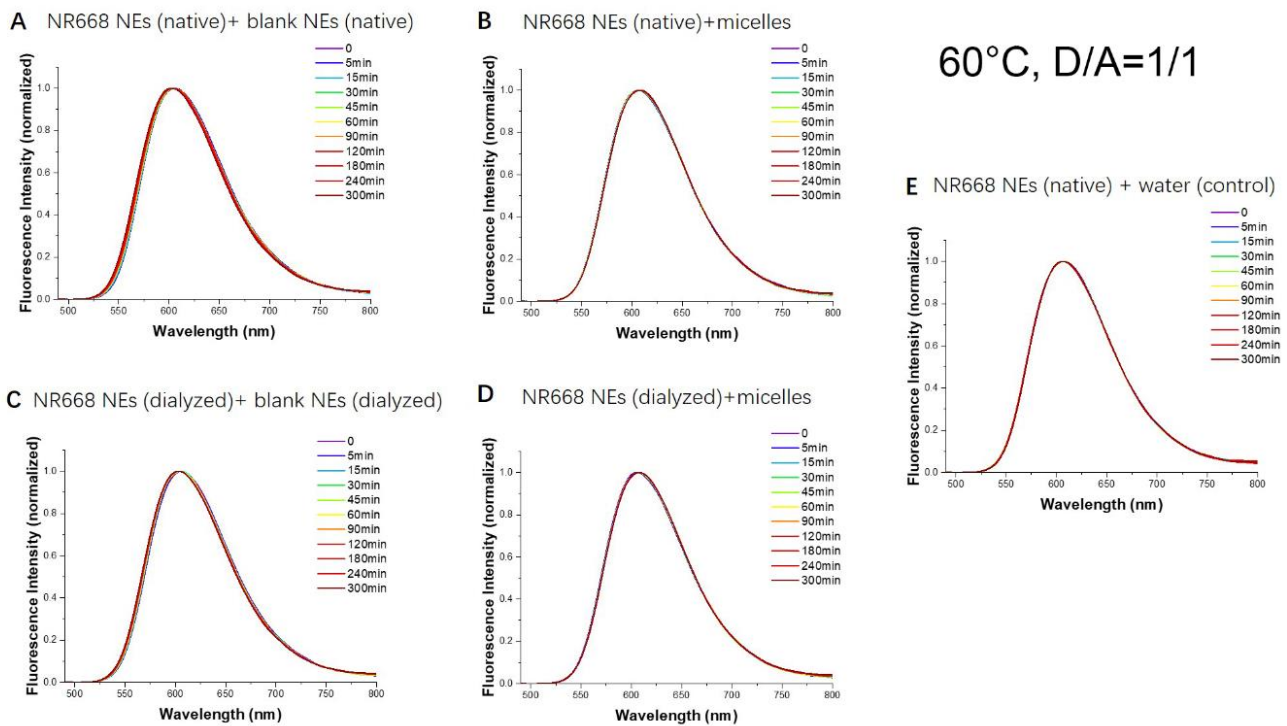


Figure S1: Structure and fluorescence enhancement of NR668, comparison between solubilizing/dispersing media: water and vitamin E acetate (VEA).



60°C, D/A=1/1

Figure S2: Fluorescence emission spectra of different system in function of time in correspondence of Fig. 2(D). This experiment was conducted for different systems varying in the nature and composition of the acceptor (see details in the text)

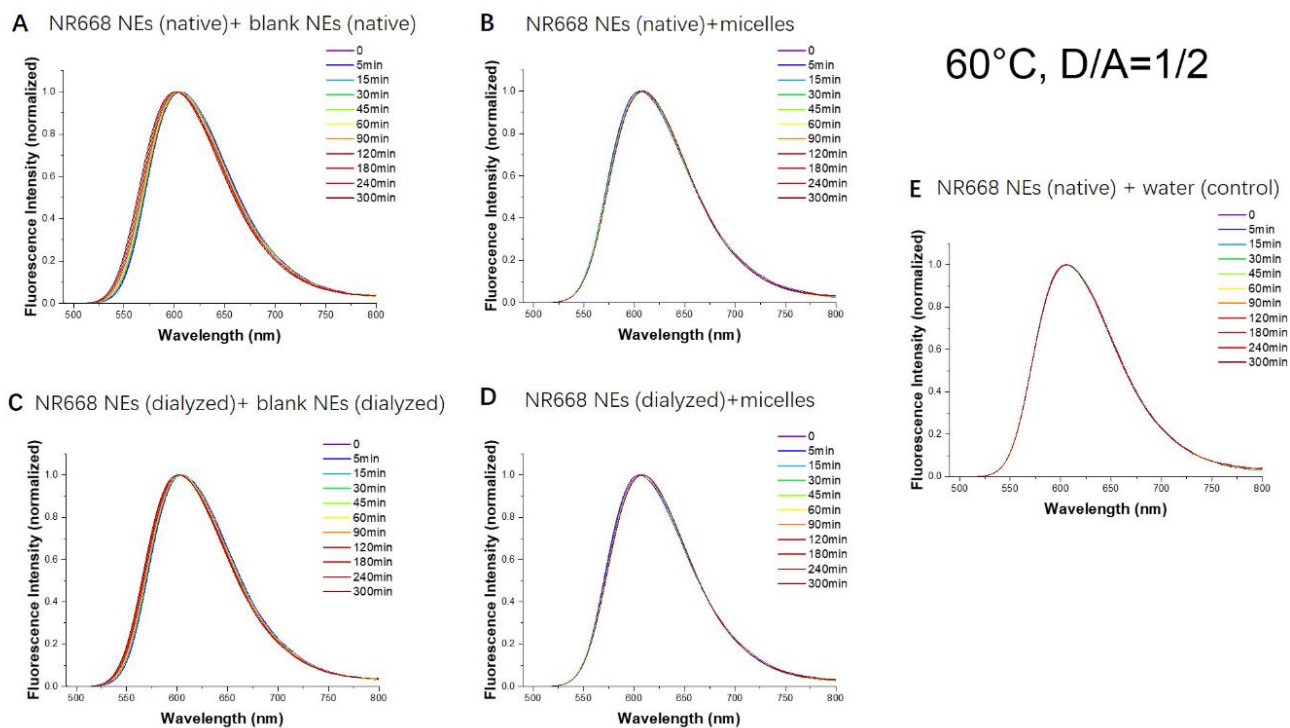


Figure S3: Fluorescence emission spectra of different system in function of time in correspondence of Fig. 2(E). This experiment was conducted for different systems varying in the nature and composition of the acceptor (see details in the text)

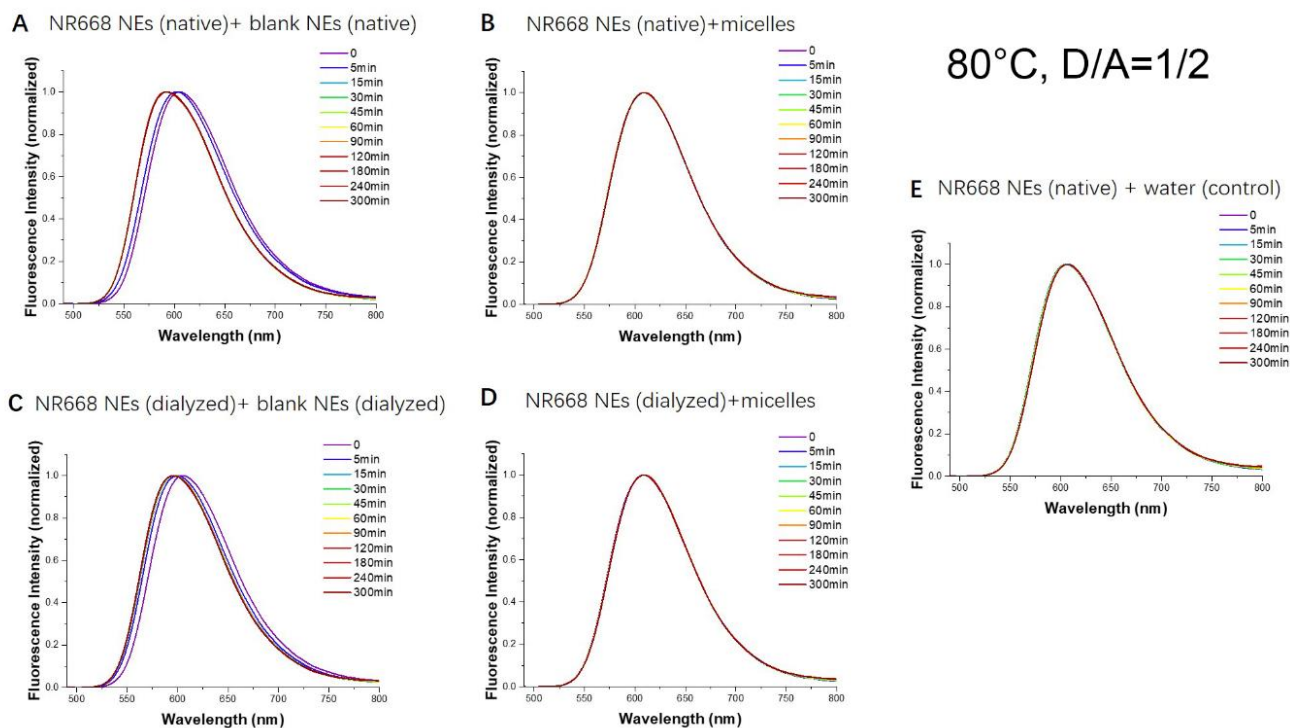


Figure S4: Fluorescence emission spectra of different system in function of time in correspondence of Fig. 2(F). This experiment was conducted for different systems varying in the nature and composition of the acceptor (see details in the text)

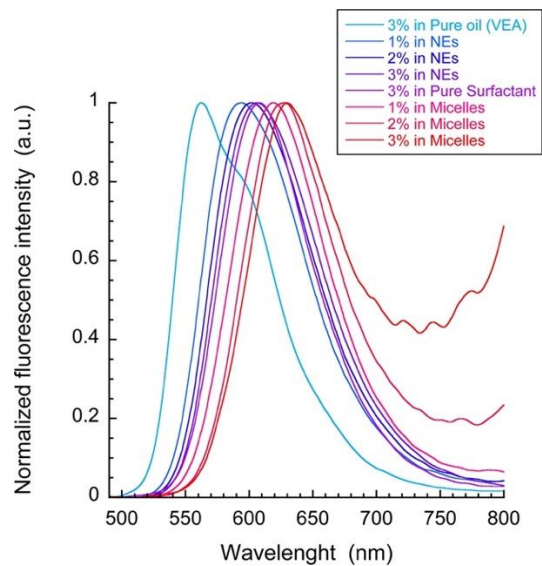


Figure S5: Normalized fluorescent spectra of NR668 solubilized in different media for various composition and concentrations in oil. All samples were diluted before measurement to finally have a similar dye concentration of 1 μM .

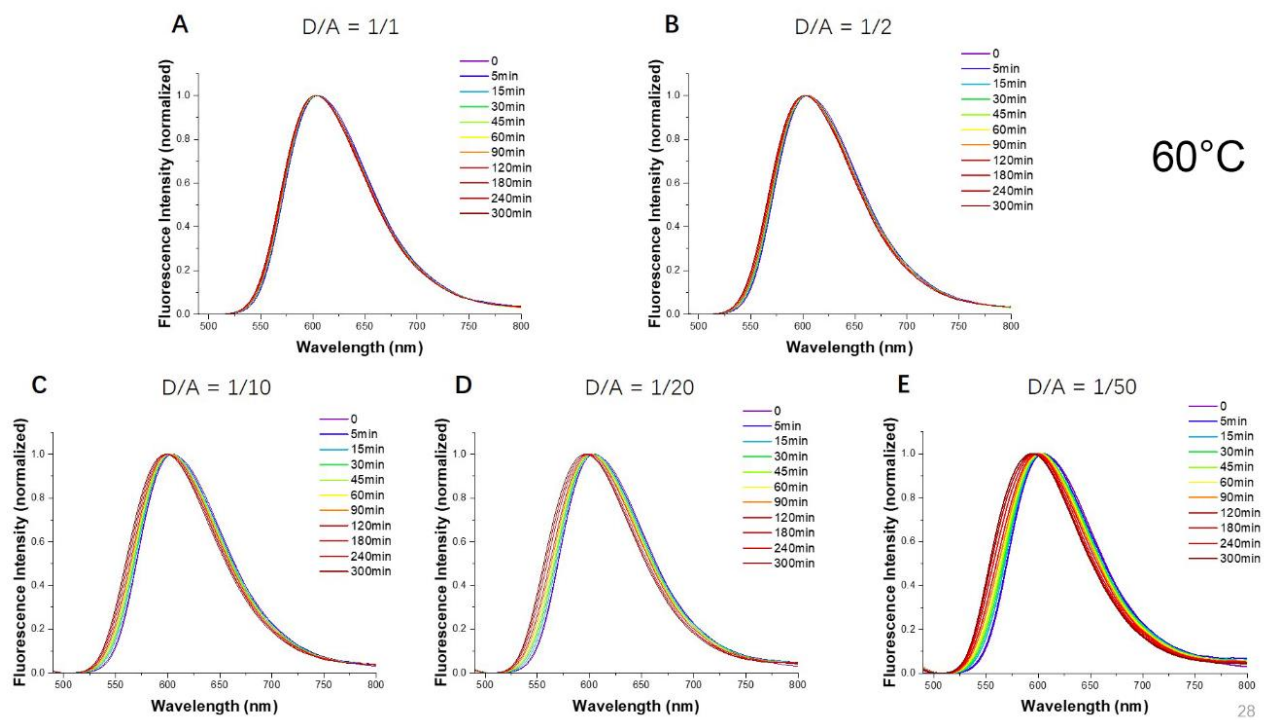


Figure S6: Fluorescence emission spectra of different D/A ratio in function of time in correspondence of Fig. 3(B).

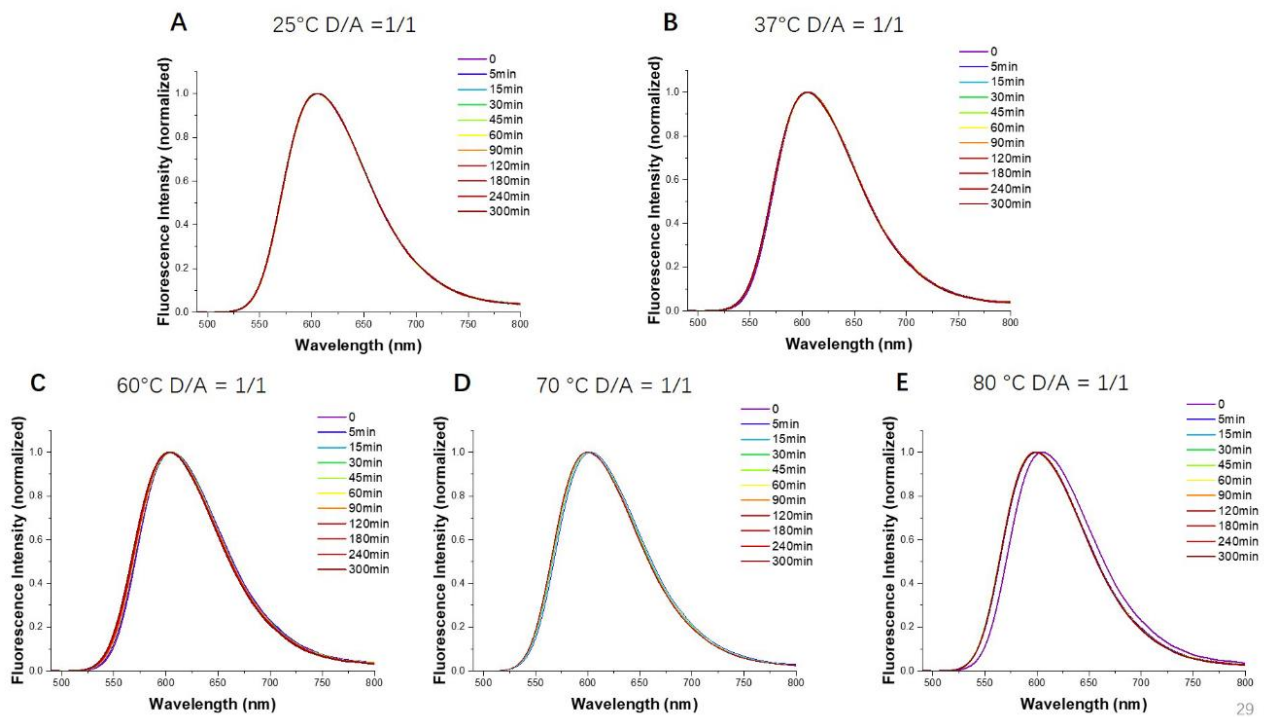


Figure S7: Fluorescence emission spectra of different temperature in function of time (with a D/A ratio of 1/1) in correspondence of Fig. 4(D).

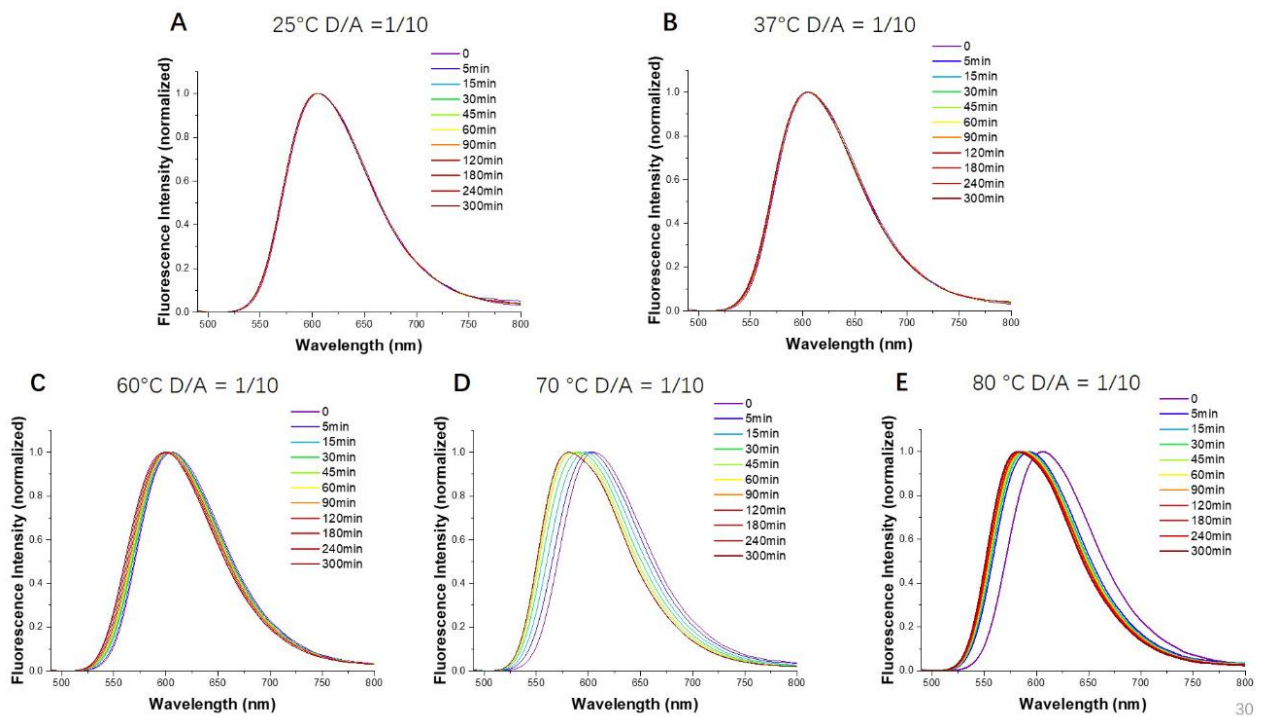


Figure S8: Fluorescence emission spectra of different temperature in function of time (with a D/A ratio of 1/10) in correspondence of Fig. 4(E).

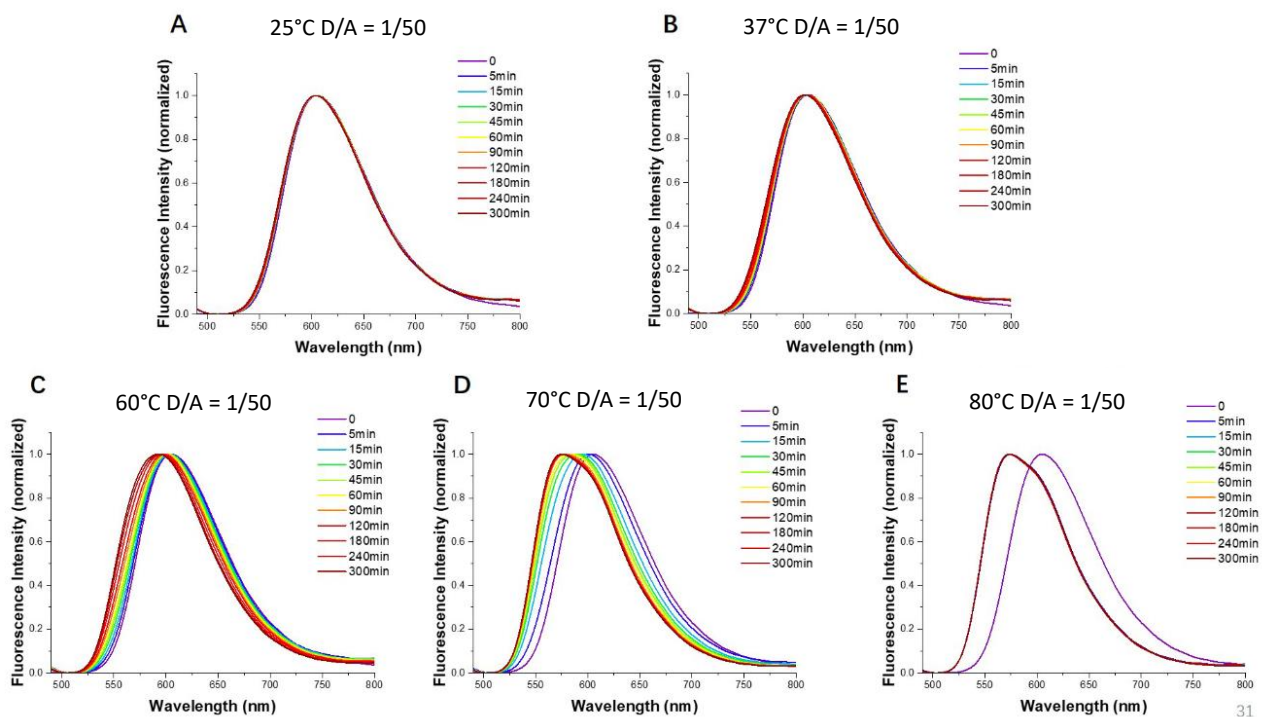


Figure S9: Fluorescence emission spectra of different temperature in function of time (with a D/A ratio of 1/50) in correspondence of Fig. 4(F).

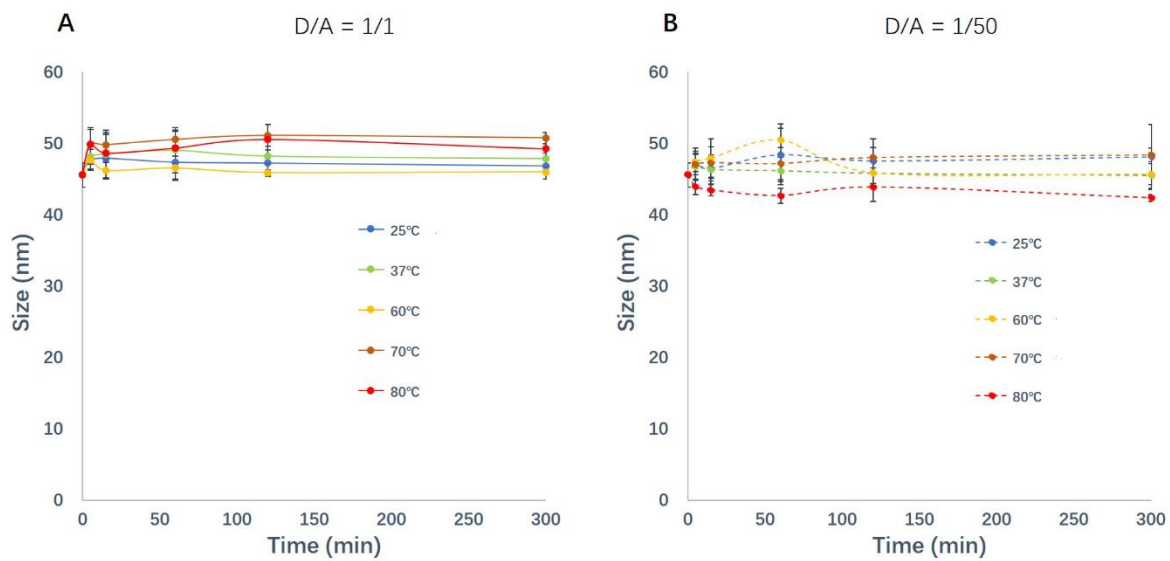


Figure S10: Size changes with incubation time in function of different temperature (varying from 25°C to 80°C) and for two donor-to-acceptor ratios (1/1 and 1/50). All the PDI values were below 0.2. Data are mean values, and error bars indicate \pm standard deviation, $n = 3$.

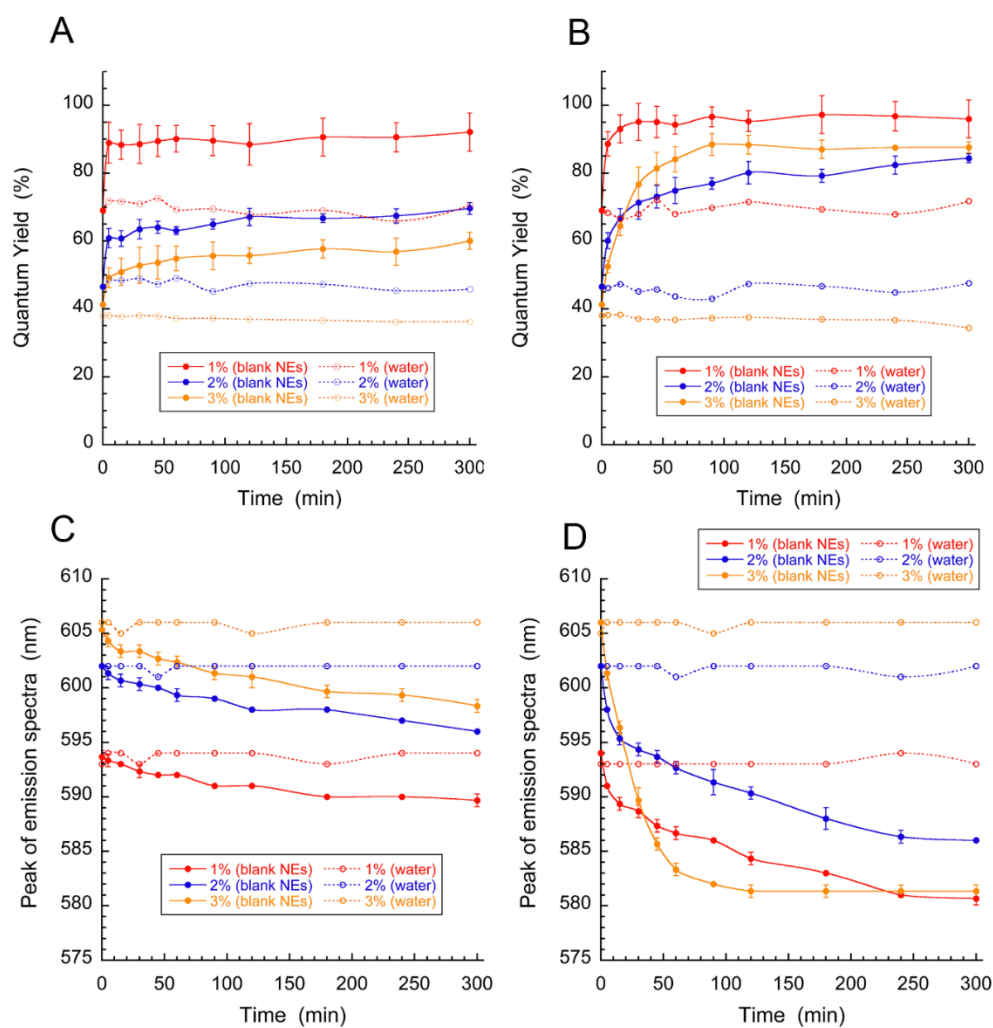


Figure S11: Quantum yield (A, B) and values of the peak of the fluorescence spectra (C, D) in function of different dye concentrations in the oil core of nano-emulsions, and for two different temperatures, 60°C and 70°C. Raw data corresponding to Fig. 5. Data are mean values, and error bars indicate \pm standard deviation, $n = 3$.

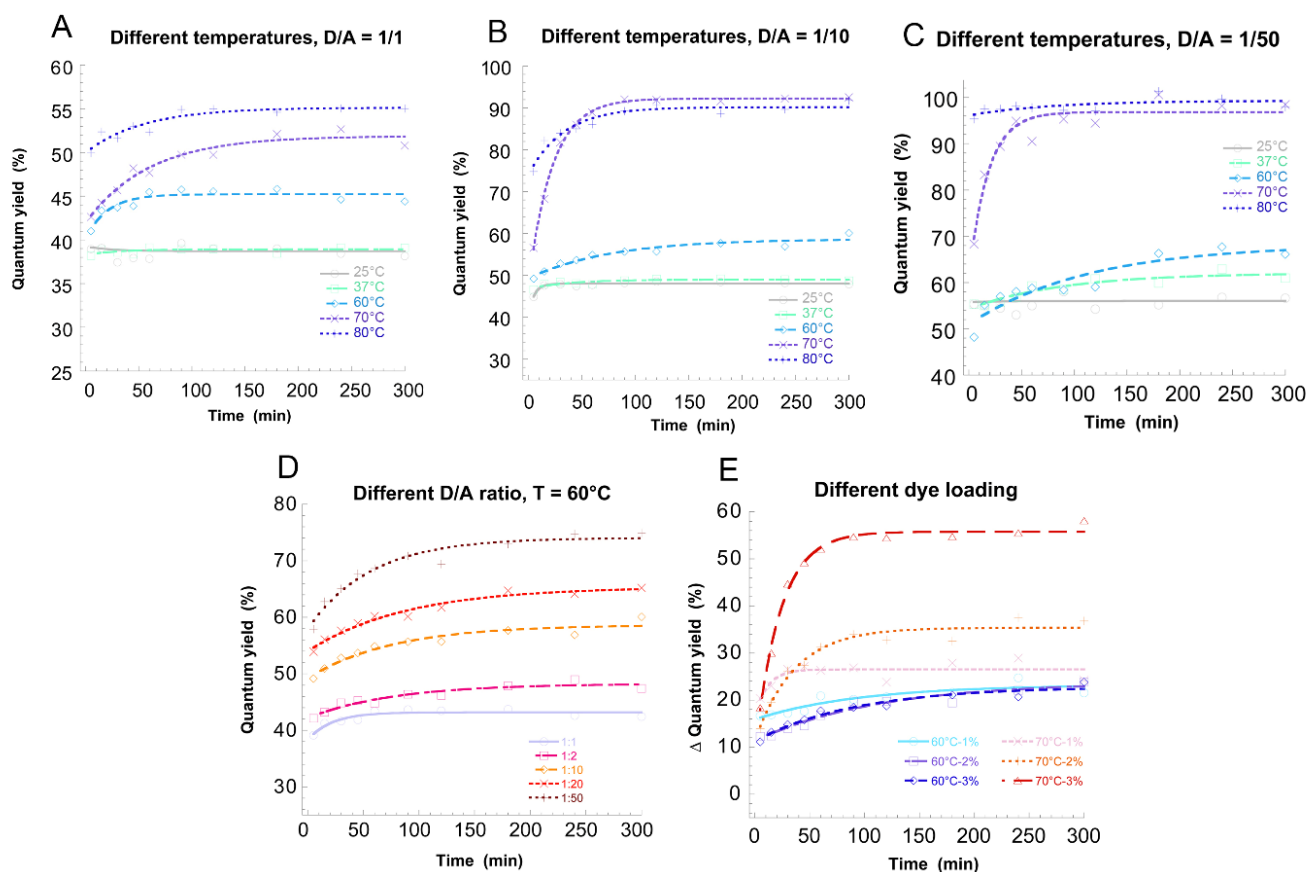


Figure S12: Mathematical fitting for quantum yield-time curves in different conditions (different D/A ratio, temperature and dye concentration). Extrapolation performed through a classical monoexponential rise, $QY(t) = QY(t=0) + [QY(t \rightarrow \infty) - QY(t=0)].[1 - \exp(-t/\tau)]$, where $QY(t=0)$ is the y-intercept, $QY(t \rightarrow \infty)$ is the QY after full stabilization, and τ a characteristic time. The values of interest, reported in Fig. 7, are eventually $QY(t \rightarrow \infty)$.